AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES 1 6

2. MODIFICATION NO.:	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	PROJECT NO. *(If applicable)*
0017	JUL 23, 2004	W81W3G-2035-7181	

6. ISSUED BY	CODE	CA31	7. ADMINISTERED BY:	CODE	E1P0100
Department of the Army Baltimore District, Corps of Engineers Contracting Division P.O. Box 1715 Baltimore MD 21203-1715			Contracting Division, Contracts Branch CENAB-CT-C 10 S. Howard ST. Room 7000 Baltimore, MD 21203-1715		

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*	(x)	9A. AMENDMENT OF SOLICITATION NO.
	X	W912DR-04-S-0001
		9B. DATED *(SEE ITEM 11)* MAY 19, 2004
		10A. MODIFICATION OF CONTRACT/ ORDER NO.
		10B. DATED *(SEE ITEM 13)*

CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers **is not extended**.

DATE OF RECEIPT OF PROPOSALS 4:00 PM, LOCAL TIME JUL 29, 2004

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:
(a) By completing Items 8 and 15, and returning __1____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER No. ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR43.103(b)
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: changes clause FAR 52.243.1
	D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor __ is not, __ is required to sign this document and return ____copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

RELOCATE ENVIRONMENTAL TESTING MISSION
ABERDEEN PROVING GROUND, MARYLAND

SEE THE FOLLOWING PAGES

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR _____ *(signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ *(Signature of Contracting Officer)*	16C. DATE SIGNED

AMENDMENT NO. 0017 TO RFP W912DR-04-S-0001
EFFECTIVE JUL 23, 2004

SOLICITATION:

1) CLAUSES, Page 2, LIQUIDATED DAMAGES-CONSTRUCTION: Delete "****" and substitute the following: "$800.00,." and delete "LIQUIDATED DAMAGES AMOUNT WILL BE ADDED BY AMENDMENT AT A LATER DATE".

AMENDMENTS:

2) Amendment No. 0014, Item 1), Plates 4, 8, 9 and 11: Delete Item 1) text as issued in Amendment No. 0014 and substitute the following: "1) Amendment No. 0004, Item 23, Plates 4, 8, 9, and 11: Delete these plates in their entirety as issued in Amendment No. 0004 and substitute the attached Plates 4, 8, 9, and 11, revised 7/16/04.

3) Amendment No. 0014, Item 2), Appendix A, Sheets 1 through 5: Delete Item 2) text as issued in Amendment No. 0014 and substitute the following: "2) Amendment No. 0004, Item 24), Appendix A, Sheets 1 through 5: Delete Plates 1 through 5 in their entirety as issued in Amendment No. 0004 and substitute the attached Appendix A, Sheets 3 of 5, revised 7/7/04, and Sheets 2 of 5 and 4 of 5, revised 7/16/04. Sheets 1 of 5 and 5 of 5 remain as is".

4) Amendment No. 0014, Item 3), Appendix B, Sheet B-1: Delete Item 3) text as issued in Amendment No. 0014 and substitute the following: "3) Amendment No. 0004, Item 25, Appendix B, Sheet B-1: Delete Sheet B-1 in its entirety as issued in Amendment No. 0004 and substitute the attached Appendix B, Plate B-1, revised 7/16/04".

5) Amendment No. 0014, ATTACHMENT LIST, Items 4), 5) and 6): Delete Items 4), 5) and 6) text in their entirety.

6) Amendment No. 0004, Item 44, Plate 52: On Plate 52 delete all notes indicating "concrete pad" or "concrete base" and substitute "gravel pad".

SPECIFICATIONS:

7) Project Table of Contents:

a) Add "DIVISION 11 – EQUIPMENT" and section number and title: "11320 GRINDER PUMP STATIONS."

b) Under DIVISION 10 - SPECIALTIES add section number and title "10520 FIRE-PROTECTION SPECIALTIES."

8) Page 01011-1, Paragraph GC-5a: At the end of this paragraph add the following: "Note: the Contractor is responsible for the cost of the permit, which will be approximately $1,000.00. The enclosed attachment, Memorandum for Record, Subject: Excavation Permit Request Instructions and APG Regulation 387-5, Excavation Permit Program is provided for information."

9) Page 01050-8, Paragraph 1.13: Delete this paragraph in its entirety.

10) Section 01330, Submittal Register: Delete submittal register in its entirety and substitute the attached revised submittal register, dated Jul 22, 2004.

11) Page 01565-1, Paragraph 1.1: Delete reference "EM 385-1-1 (6 SEP 1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual" under publication ENGINEERING MANUALS (EM) as originally issued and substitutes the following: "EM 385-1-1 (3 Nov 2003) Safety – Safety and Health Requirements."

12) Page 01565-9, Paragraph 1.9.4: Delete "[Enter Appropriate Subpart Title Here] 1.9.4" from the beginning of this paragraph.

AMENDMENT NO. 0017 TO RFP W912DR-04-S-0001
EFFECTIVE JUL 23, 2004

13) Page 01565-13, Paragraph 1.13.9.1: Delete "- WHO TRANSPORTS IT?" from the end of this paragraph.

14) Page 01670-3, Paragraph 1.5: Delete "*Content depends upon the design – See Section 03XXX" from the bottom of page 3 as originally issued and substitute the following "*Content depends upon the design – See Sections 03300A and 03307A".

15) Page 02510-1, Part 1 General: Add the following new paragraph:

Harford County Standards.

All work shall meet the Harford County Standard Specifications and Details as noted on the Drawings, Appendix A, Sheet 1 of 5, General Note 3. In case of a conflict between Specification Section 02510 and Harford County Standard Specifications, the Harford County Standard Specifications will supersede.

16) Page 02531-1, Paragraph 1.3 General Requirements: Add the following new paragraph:

Harford County Standards

All work shall meet the Harford County Standard Specifications and Details as noted on the Drawings, Appendix A, Sheet 1 of 5, General Note 3. In case of a conflict between Specification Section 02531 and Harford County Standard Specifications, the Harford County Standard Specifications will supercede."

17) Page 02532-3, Paragraph 2.4: Delete "or concrete, except that concrete boxes may be installed only in locations not subject to vehicular traffic" from the first sentence of this paragraph.

18) Page 05310-6, Paragraph 2.3.1: Delete "cellular and" from the second sentence of this paragraph.

19) Page 08520A-2, Paragraph 1.2.1: Add "and should withstand 3.5 psi at 90 degree incident." at the end of the first sentence of this paragraph.

20) Division 10 - SPECIALTIES: Add attached Specification Section 10520 FIRE-PROTECTION SPECIALTIES.

21) Specification Division 11: Add attached Specification Section 11320 GRINDER PUMP STATIONS.

22) Page 13120-4, Paragraph 1.1: Add publication "INTERNATIONAL BUILDING CODE (IBC)" at the end of this paragraph. Immediately after "INTERNATIONAL BUILDING CODE (IBC)" add "IBC (2003)".

23) Page 13930A-8, Paragraph 2.4: Delete paragraph text as originally issued and substitute the following: "Above ground piping shall be steel."

24) Page 15400-19, Paragraph 2.5: Delete paragraph text as originally issued and substitute the following: "Backflow preventers shall be approved and listed by the Foundation for Cross-Connection Control & Hydraulic Research. Double check valve assemblies shall be tested, approved, and listed in accordance with FCCCHR Manual."

25) Page 15400-23, Paragraph 3.1.3: Delete the word "Enpure" in the first sentence of this paragraph.

26) Page 15950-8, Paragraph 2.1: At the beginning of this paragraph add the following: "The control system shall be Johnson Controls, Inc. - Metasys. This is a proprietary item."

AMENDMENT NO. 0017 TO RFP W912DR-04-S-0001
EFFECTIVE JUL 23, 2004

DRAWINGS:

27) Plate 10: Delete Plate 10 as originally issued and substitute the attached Plate 10, revised 7/16/04.

28) Plate 14: Delete Plate 14 as originally issued and substitute the attached Plate 14, revised 7/16/04.

29) Plate 16: Add the following GENERAL NOTES:

"2. Provide control joint at mid points of east and west interior perimeter masonry walls in the administrative area. Control joints should be centered on column line 6.

3. Install portable Fire Extinguishers in accordance with Specification Section 10520 FIRE-PROTECTION SPECIALTIES. Locations and installation height shall be as directed by Contracting Officer."

30) Plate 27, II. Design Code Criteria: Add the following references: "ASCE 7-2002 for wind and snow load" and "TM 809-4 in accordance with TI 809-2 for building seismic design."

31) Plate 27, V-General Design Criteria and Approach, Notes C3 and C4: Delete all requirements for the Contractor to transmit information to the Architect.

32) Plate 28, Foundation Plan (1/S-201): Revise this plan in accordance with the attached Sketch SK-S1, dated 7/7/04. The footing lines on Sketch SK-S1 are shown in solid lines.

33) Plate 28: Delete Note 7 as originally issued and substitute the following: "7. DESIGN LIVE LOAD = 250 PSF; INTERIOR SPACES = 100 PSF"

34) Plate 29, Mezzanine Slab & Joist Detail (2/S-301): Delete the words "Minimum 24 Ga. Galvanized" in the note referring to "STEEL DECK" as originally issued and substitute the following: "Minimum 22 Ga. Galvanized."

35) Plate 29, Mezzanine Slab & Joist Detail (2/S-301): Delete the word "16K6" in the note referring to 'Open Web Joist" as originally issued and substitute the following: "20K10".

36) Plate 29, Mezzanine Slab & Joist Detail (2/S-301): Add a bent plate at the edge of the concrete slab with the following note "Continuous 6" x 8" x 3/8" (minimum), bent plate/pour stop."

37) Plate 29, Joist Anchorage & Bond Beam Details (3/S-301): Delete note "Type 20K10 " as originally issued and substitute the following: "Type 16K6".

38) Plate 29, Interior Walls/Bridging Detail (4/S-301): Delete note "L2 x 2 x ¼ CONT. TYP. AT TOP COURSE. PROVIDE BRIDGING AS REQUIRED" as originally issued and substitute the following: "L2 x 2 x ¼ WITH EPOXY ANCHOR BOLTS W/ MIN. 4" EMBEDMENT @ 18" O.C."

39) Plate 29, Interior Walls/Bridging Detail (5/S-301): Delete note "L2 x 2 x ¼ CONT. TYP. AT TOP COURSE. PROVIDE BRIDGING AS REQUIRED". Delete angles on both sides.

40) Plate 29, GENERAL NOTES: Add the following note:

"D. MECHANICAL/ELECTRICAL CHANNEL

The building Design/Build contractor is responsible for mechanical/electrical channel design.

Dead load is 450# per foot for the piping and conduit requested by the Owner.

AMENDMENT NO. 0017 TO RFP W912DR-04-S-0001
EFFECTIVE JUL 23, 2004

The Design/Build contractor will consult with the Owner to determine if any additional load capacity is required for support of future piping and/or conduit and wiring before proceeding with design.

The supports are to be 4" X 4" channels supported by ½" rods welded to the structure.

Details of the mechanical/electrical channel are located on Plate 35 (Drawing M-301)."

41) Plate 31, FIRE PROTECTION NOTES: Delete Fire Protection note No. 10 as originally issued and substitute the following:

"10. Sprinkler system and water supply requirements shall be as follows:

Ordinary Hazard Group II (NFPA 13):

Design Density: 0.20 GPM / Square foot
Design Area: 1500 Square Feet"

42) Plate 34, Detail A/M201- Part Plan – Mechanical Room: Delete the note associated with the air compressor as originally issued and substitute with the following: "Air Compressor (Government furnished, contractor installed) Run ¾" CD to nearest floor drain."

43) Plate 34, Detail A/M201- Part Plan – Mechanical Room: Delete the note associated with the air dryer as originally issued and substitute with the following: "Air Dryer (Government furnished, contractor installed) Run ¾" CD to nearest floor drain."

44) Plate 34, Detail A/M201- Part Plan – Mechanical Room: Add the following Note No..3: "3. Water Meter shall be provided and installed downstream of Fire protection take-off and prior to domestic water shut-off valve."

45) Plate 36, Fuel Oil Storage Tank Detail: Add the following Notes:

"3. ½" FOS & FOR located below grade shall be double encapsulated prefabricated type piping."

"4. Fuel Oil Storage Tank shall be enclosed with a chain-link fence with lockable gate. Fence shall be installed around the perimeter of the concrete pad (approximately 12'-0" x 7'-0") and shall be at least 6'-0" in height, in order to prevent forced entry."

46) Plate 36, Deionized Water Piping Schematic: Add the following Note #1:

"1. The backflow preventor located in the ¾" water line shall be a double check type."

47) Plate 32: The two dampers located within exhaust ductwork, south of column line 6, shall be designated with FD as fire dampers.

48) Plate 32 : Delete note referring to "24x24 exhaust air louver" located south of column line 5 as originally issued and substitute the following: "24x24 exhaust air louver. Install bottom of louver at 10'-0" AFF."

49) Plate 38, Air Handling Unit Control: Delete valve V-2 from suction line as originally issued and relocate it in the liquid line.

50) Plate 46, Part Plan – Comm. Closet 110: Add the following Note 3:

"3. Provide plywood backboard 8'- 0" high, on the full width of the north and east walls."

AMENDMENT NO. 0017 TO RFP W912DR-04-S-0001
EFFECTIVE JUL 23, 2004

ATTACHMENTS:

1) Memorandum for Record, Subject: Excavation Permit Request Instructions and APG Regulation 387-5, Excavation Permit Program.
2) Revised Submittal Register, dated Jul 22, 2004.
3) Section 10520 FIRE-PROTECTION SPECIALTIES.
4) Section 11320 “GRINDER PUMP STATIONS”, dated July 07, 2004.
5) Sketch – SK-S1, dated July 7, 2004
6) Plates 4, 8, 9, 10, 11, and 14 dated July 16, 2004.
7) Appendix A- Plate 2 of 5, dated July 16, 2004.
8) Appendix A- Sheet 3 of 5 dated July 7, 2004.
9) Appendix A- Sheet 4 of 5, dated July 16, 2004.
10) Appendix B – Plate B-1, dated July 16, 2004.

U.S. Army Garrison
Directorate of Installation Operations
Engineering and Construction Division
Construction Branch
Excavation Control Office
Bldg. 4304 room 003

MEMORANDUM FOR RECORD

SUBJECT: Excavation Permit request instructions

Complete the top section of the excavation/digging permit form SSB Form 1247-R, Section "A"

- Your control number will help you keep track of what request you submit prior to getting the ECO control #.
- Government Contract #: Example **DAAD05-XX-X-XXXX (All contractors must have a government contract #)**
- Government Contract Delivery order #: Example **DO XXXX (only needed on requirement type contracts with delivery and/or task orders)**
- DIO Work Order #: Example **XXQXXXXXJ ((DA-form 4283 work request) The complete number required on all permits, All work must have an approved DIO work order # for funding requirements)**
  Contact the government project manager for the complete #, if it has not been provided.
- DIO service order #: Example **XXQXXXXXR (DIO shops only)**
- Government Contracting Officer Representative (COR), to include complete **phone** # and **Fax** #: (XXX)-XXX-XXXX
- Government Project Manager (PM), to include **phone** # and **Fax** #: (XXX)-XXX-XXXX
- Permit Holder's Name, to include complete **phone** # and **Fax** #: (XXX)-XXX-XXXX
- Contractor's Name and Gov't. Organization's Name requesting work are responsible for the cost of the permit for the utility marking.
- Date permit is requested: **(MM/DD/Year).** This is the date the permit is given or received in the Excavation Control Office of DIO.
- Date permit is required (the date you want to start work): **(MM/DD/Year) and (requires not less then seven working days for processing permit, unless it's an EMERGENCY)**
- Excavation zone is, **Aberdeen** or **Edgewood** (place an X or circle around location) with **Bldg.** # or site name
- Description of what you are going to accomplish (Not more then 250 characters): examples, Install electric poles, Install new U/G electric, area marked with white paint.
- Provide a map or sketch of areas required to be marked, **(White line or white pin flag the proposed route or location of work being accomplished on job site).**
- Near the bottom of the Section "A" there is an area for the **permit hold's signature. Please sign**.

The government Excavation Control Office will process and complete the balance of this form.
It will assign a control #. An approved permit will be issued when all review comments are obtained and the locating contractor has completed the U/G utility mark out. The expiration date will be in the top left hand corner, 30 days after approval date. The permit will be faxed to the permit holder at the number provided or can be pickup at the ECO. The government PM and/or COR will be forwarded a copy when fax numbers are provided.
Note to all permit holders and requesting activities. You're responsible for AS-BUILT drawing and maps on a digital disk certified by a land surveyor (Micro Station format .dgn) This will provide update information for the Garrisons mapping system.
NOTE to Contractors: The permit holder is responsible for contacting MISS UTILITY 1-800-257-7777.
If you have any questions please call me @ 410-278-4506, my fax # is 410-278-9445.

Respectfully Yours
George Colletta

DEPARTMENT OF THE ARMY
U.S. ARMY ABERDEEN PROVING GROUND
Aberdeen Proving Ground, Maryland 21005-5001

1 June 2001

APG Regulation

Safety
EXCAVATION PERMIT PROGRAM

The word "he" (and its derivatives) when used
In this regulation represents both the masculine
And feminine genders; exceptions will be noted.

Title — Page

CHAPTER 1

GENERAL

1-1. PUPPOSE. This regulation establishes policy, responsibilities, and procedures for performing excavations on Aberdeen Proving Ground (APG). The intent of this regulation is to establish a formal Excavation Permit (EP) process that will minimize the potential for death, personnel injury, property damage or loss of utilities at APG.

1-2. SCOPE. This regulation applies to all activities located at APG. It will govern all excavation/digging performed within the boundaries of the installation known as APG. Where this regulation conflicts with the terms of a negotiated labor agreement, the provisions of the agreement will be applicable unless changes are required by law or by regulation of appropriate authority. Where this regulation conflicts with more stringent requirements, the more stringent criteria will apply.

1-3. DEFINITIONS. See Appendix A.

1-4. RESPONSIBILITIES.

a. Commanders/Directors, staff officers, and heads of activities will:

(1) Ensure no excavation or digging is performed without an approved EP.

(2) Complete an Excavation Permit, SSB Form 1247-R, in accordance with the procedures outlined in Chapters 2 and 3. A copy of this form is provided at the back of this regulation for reproduction purposes.

(3) Report, via a digital copy of the as built drawing, all new and existing underground utilities and structures installed by their organization or by their contractor to the Directorate of Public Works (DPW), Excavation Control Office.

b. The Directorate of Installation Operations, USAGAPG, will:

(1) Establish and operate the Excavation Control Office (ECO).

(2) Process and issue all EPs through the ECO.

(3) Coordinate with the various entities involved in the approval process, and provide final approval for excavation.

(4) Maintain all post records of utility drawings.

(5) Identify, mark, and locate existing government owned utilities prior to excavation. Utilities under the control of "MISS UTILITY" require a control number and will be located by MISS UTILITY.

(6) Coordinate the repair of all damaged utilities or other property.

(7) Ensure that all contracts requiring excavation will have a general condition that requires obtaining an excavation permit from the ECO.

(8) Periodically monitor excavation work to ensure compliance with the requirements of the EP. Noncompliance may result in an order to stop work.

(9) Maintain the location of discovered UXO in the GIS system.

c. The Directorate of Safety, Health and Environment (DSHE), USAGPAG, will:

(1) Evaluate all requests for excavation to determine the potential for encountering hazards to health, safety and the environment as a result of the work to be performed.

(2) Specify appropriate precautions to be taken for each excavation to eliminate, prevent or minimize potential hazards to health, safety or the environment.

(3) Coordinate, when necessary, with Industrial Hygiene, Kirk U. S. Army Health Clinic, to identify appropriate protective clothing and equipment for personnel involved in the excavation work.

(4) Periodically monitor excavation work to ensure compliance with safety, health, and environmental requirements. Noncompliance may result in an order to stop work.

(5) Appoint, in writing, a point of contact (POC) for EP and transmit a copy of the appointment letter to the ECO.

(6) Coordinate results of Unexploded Ordnance (UXO) sweeps with DPW for inclusion in the GIS records.

d. The Directorate of Information Management will:

(1) Maintain accurate records of buried communication lines and convey their location via maps and/or ground markings when requested to do so.

(2) Appoint in writing a POC for EP and transmit a copy of the appointment letter to the ECO.

e. The Army Materiel Command Acquisition Center will:

(1) Ensure that contracts are modified to recover contractor inflicted damages to the government.

(2) Ensure that disputes on damages are processed and resolved timely.

(3) Ensure all contracts with underground (U/G) utilities include as built mapping in digital format (.dgn) requirements.

f. The U.S. Army Soldier and Biological Chemical Command (SBCCOM) will:

(1) Maintain and update the SBCCOM security utilities drawings in the GIS system.

(2) Identify the general area where security communication lines are located so that the ECO can perform initial screening.

(3) Appoint, in writing, a POC for EP and transmit a copy of the appointment letter to the ECO.

g. The U.S. Army Aberdeen Test Center (ATC) will appoint, in writing, a POC for EP and transmit a copy of the appointment letter to the ECO.

h. The Waste to Energy Partners will:

(1) Appoint, in writing, a POC of EP and transmit a copy of the appointment letter to the ECO.

(2) Locate and mark all U/G utilities under the maintenance of their contract.

(3) Maintain an automated mapping system (GIS) of all their U/G utilities.

i. The individual responsible for excavating will:

(1) Ensure compliance with the requirements of this regulation and the provisions/requirements outlined in the EP. Noncompliance with the conditions of the EP or any health, safety, and environmental requirements may result in an order to stop work.

(2) Submit the EP (with the Excavation Information Section completed) along with the required maps and/or sketches to the ECO at least ten (10) work days prior to scheduled excavation.

(3) Mark the exact location of excavation with white marking paint when area of excavation is less than 10 square feet, or as directed by the ECO.

(4) Contact MISS UTILITY (1-800-257-7777) in accordance with annotated Code of Maryland Article 78 Section 28.

(5) Complete and turn in the after action report (AAR) to the ECO within ten (10) work days after excavation.

1-5. POLICY. All excavating, digging, tunneling, trenching, etc., that occurs within the boundaries of APG must comply with the requirements outlined in Title 29 Code of Federal Regulations, Part 1926 Subpart P, Excavations, and this regulation. Authorization to excavate is good only for the specific site for which it is issued.

CHAPTER 2

ROUTINE EXCAVATION PROCEDURES

2-1. Before any earth disturbance is to occur, an approved Excavation Permit (EP) shall be obtained. The EP process begins with completing the Excavation Information Section of SSB Form 1247-R.

2-2. The excavator/requester is to attach site and area maps, and applicable sketches, with sufficient detail so the location of the size and depth of the excavation can easily be determined. If the ECO has difficulty in determining the excavation location or if the excavation area is less than ten square feet, the excavator will be required by the ECO to mark the location with white marking paint.

2-3. The excavator/requester is to deliver the request to the ECO (see Appendix B for location). The ECO has ten (10) working days (except emergencies) to process the request. The excavator will receive a telephone call from the ECO when the permit is ready for pickup. Pickup is to be made in person so that permit and conditions can be explained or if ECO determines suitable can fax the permit to the requester.

2-4. The ECO will concurrently transmit the EP to the following organizations for review, comment, and approval. Each office has four (4) working days (except emergencies) to process their portion of the EP. Upon completion of their portion of the EP, they will transmit the results back to the ECO for consolidation and final approval.

ISSUE	OFFICE
a. Safety	Installation Safety Division
b. Environmental	Environmental Conservation & Restoration Division
c. Security (Edgewood)	U.S. Army Soldier and Biological Chemical Command, Security Office
d. Commercially Owned Utilities	MISS UTILITY

2-5. No permit will be released until U/G utility marking has been completed and results documented on the EP. The excavator has the responsibility to ensure the marking has been done prior to excavation and MISS UTILITY has been notified.

2-6. The approved excavation permit shall be on site during the excavation and available for review by government quality assurance, safety, environmental and emergency services personnel. The excavation permit is valid for a period of thirty (30) calendar days during which time the excavator is responsible for maintaining the visibility of the utility

markings. After 30 calendar days the permit holder must request revalidation by the ECO. The EP can be revalidated two (2) times and then a new EP must be initiated.

2-7. Hand digging is to be used within two (2) feet semi-spherically of marked locations of a utility. Hand excavation is to be extended down vertically to the required depth of excavation.

2-8. In the event of damage to or dislocation or disturbance of any underground utilities in connection with any excavation, the persons responsible for the excavation operations shall IMMEDIATELY cease work and notify the ECO.

2-9. If any underground utilities are damaged by any person who has failed to comply with any section of this regulation, that person shall be deemed negligent and shall be liable to the owner of the underground utilities for the total cost of the repair and any collateral damage inflicted to users of the underground facility.

2-10. Any utilities or structures discovered that were not identified by the EP will be reported by the excavator to the ECO on the Utility Location Report (ULR).

2-11. Emergency excavation requests (see definitions) must be validated by the ECO. See chapter 3 for emergency procedures.

CHAPTER 3

EMERGENCY EXCAVATION PROCEDURES

3-1. Emergency Excavation Permit Processing. An emergency excavation is one that needs to be done immediately to protect human life or the environment, or prevent or minimize damage to property. An emergency permit will be processed by the ECO within 2 hours of notification in writing with mapping or as otherwise dictated by regulation. The permit will consist of an as-built drawing review, notification to MISS UTILITY for government activities only, and an on-site investigation/marking. Government contractors (permit holders) will be required to contact Miss Utilities. The ECO contractor will coordinate with other activities when such coordination will not appreciably delay the protection of life or the environment. When an emergency permit is sent or called in, someone familiar with the emergency must remain on site and guide responding units and report back to the ECO once they have responded. This person (permit holder) will also be required to sign permit as permit holder when ECO locating contractor responds to emergency permit site for the locate and marking.

3-2. Emergency Procedures During Excavation.

a. Unexploded Ordnance. Any unidentified, unexpected metallic object encountered during excavation may be unexploded ordnance (UXO). When encountered, work will stop, personnel will evacuate the immediate area, and emergency response will be initiated by dialing "911" on any telephone.

b. Chemical Exposure. If personnel suspect they have encountered or have been exposed to hazardous chemicals during excavation, they must stop work, evacuate up wind from the area, dial "911", and wait for the APG emergency response team. Personnel suspected to be contaminated must not be transported to a medical treatment facility prior to arrival of APG emergency response personnel.

c. Underground Utilities.

(1) Gas Breaks. Upon damage of an underground gas line, the excavator is to dial "911" immediately to notify the Emergency Operations Center.

(2) Water Main/Sewage Breaks. Upon rupture of a water main or sewer line, the excavator is to contact the ECO immediately.

(3) Communications. Upon the damage of a communications cable, the excavator is to contact the ECO immediately.

(4) Repairs. All repairs are to be made by qualified journeyman level personnel of the contractor IAW with government specifications. Any disputes on repairs by a contractor are to be resolved by the AMC Acquisition Center IAW applicable Code of Federal Regulations.

3-3. After duty hours notification: After normal duty hours, on scheduled days off or holidays, the APG Fire/Police Dispatcher receiving 911

notification of emergency at an excavation site or an emergency requiring excavation will notify the APG Duty Office by calling 410-278-5225.

APPENDIX A

DEFINITIONS

Contractor. A person who performs excavation or demolition work under a contractor or subcontractor.

Emergency. A situation where excavation must be done as soon as possible in order to facilitate repair of service or utilities or to alleviate a situation which involves danger to life, health, or property.

The following are examples of emergency requests:

- Leaks
- Breaks
- Repair of utilities when customers are out of service
- Repair of traffic signals

The following are examples that are not emergencies:

- Installing service
- Fencing
- Landscaping
- Poor scheduling on the excavator's part

Excavation. Any operation in which earth, rock or other material in or on the ground is moved, removed or other wise displaced by means of any tools, equipment or explosives and includes, without limitation, grading, trenching, digging, ditching, dredging, drilling, auguring, tunneling, scraping, cable or pipe plowing and driving, removing any structure or mass of material.

Excavator. Any individual, firm, contractor, joint venture, partnership, corporation, association, governmental unit, department or agency to include any trustee, receiver, assignee or personal representative who performs the excavation. In the case of sub-contractor the prime contractor is the responsible party.

Underground. Any item of personal or government owned property or utilities which are buried or placed below ground or submerged for use in connection with the storage of telegraphic communications, electric energy, oil, gas or other substances. This includes but not limited to pipes, sewers, conduits, cables, valves, lines, wires, manholes, attachments and those portions of poles below ground.

Work Days. Monday through Friday, excluding Federal government holidays and the Garrison's regularly scheduled Fridays off.

APPENDIX B

USAGAPG POINTS OF CONTACT

NAME	LOCATION	ORGANZATION	TELEPHONE
Emergency Operations Center	Bldg 314	Directorate of Plans, Training and Mobilization	410-278-5225 or 911
Excavation Control Office	Bldg 4302	Directorate of Public Works	410-278-4506
Installation Safety Division		Directorate of Safety, Health and Environment	
Aberdeen Area	Bldg 4304		410-306-1094 or 1095
Edgewood Area	Bldg E4430		410-436-3157
Environmental Conservation & Restoration Division	Bldg E4430	Directorate of Safety, Health and Environment	410-436-7198
Logistics Support Division	Bldg 3240	Directorate of Information Management	410-278-2941 410-278-7574
Security - Edgewood Area	Bldg E4470	Directorate of Law Enforcement and Security	410-436-3901

1 June 2001 APGR 385-7

(AMSSB-GSH-S)

FOR THE COMMANDER:

DAVID G. BURDICK
Adjutant General

DISTRIBUTION:
B2 plus 40 USAGAPG Safety Office
10 ERDEC Safety Office
10 ATC Safety Office
10 ARL Safety Office
10 OC&S Safety Office
2 AEC Safety Office
2 MRICD Safety Office
2 TEU Safety Office
2 CHPPM Safety Office
2 SBCCOM Safety Office
2 USAGAPG, ATTN: AMSSB-BIM-R
75 Publications Stockroom

SUBMITTAL REGISTER, July 22, 2004

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		01000	SD-01 Preconstruction Submittals															
			Cost or Pricing Data	1.7	G	AO												
			Equipment Data	1.8	G	AO												
			Title Evidence															
			Invoice Copies															
			EAP Form 1199, EAP Form 1226,		G	AO												
			FD-258 (Fingerprint Card), and SF															
			85P															
			Progress Schedule	1.2	G	AO												
			Modified Chart		G	AO												
			Photographs	1.12														
			SD-10 Operation and Maintenance															
			Data															
			O and M Data	1.9	G	AO												
			Commissioning Activity for HVAC	1.3.3	G	AO												
		01050	SD-01 Preconstruction Submittals															
			Shut Down Utility Services	1.5.2	G	AO												
			Checklist	1.5.3	G	AO												
			SD-07 Certificates															
			Operations Statement	1.10.2	G	AO												
		01060	SD-01 Preconstruction Submittals															
			Safety Supervisor	1.3	G	AO												
			Activity Phase Hazard Analysis	1.3	G	AO												
			Plan															
			Outline Report															
			OSHA Log															

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		01060	SD-07 Certificates														
			Language Certification	1.3													
		01070	SD-01 Preconstruction Submittals														
			Procedures	3.4	G AO												
		01200	SD-04 Samples														
			Sample Tags	1.7.2.2													
		01451	SD-01 Preconstruction Submittals														
			CQC Plan	3.2	G AE												
			Phase Notification														
			Request		G AE												
			CQC Mgr Qualification		G AO												
			SD-05 Design Data														
			Notification of Changes	3.2.4	G AE												
			Punchlist	3.8.1	G AE												
			Minutes	3.3													
			SD-06 Test Reports														
			Tests	3.7.1	G AE												
		01510	SD-04 Samples														
			Site Plan	1.8	G AO												
			Office and Parking Layout Plan		G AO												
			Temporary Electrical Work	1.6	G AO												
		01565	SD-01 Preconstruction Submittals														
			Environmental Protection Plan	1.5	G AO												
			Recycling and Waste Minimization Plan	1.5.3													
			Environmental Permits	1.6	G AO												

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		01565	Water/Sewerage Construction	1.9.1.3	G	AO												
			Permit															
			Dust Control	1.9.2.2														
			Facility Plan	1.10	G	AO												
			Temporary Plan	1.10.1	G	AO												
			Pesticides	1.11	G	AO												
			Disposal Plan	1.12.2	G	AO												
			Waste Plan	1.12.5	G	AO												
			Radiation Emitting Equipment	1.17	G	AO												
			Sampling and Analysis Services	1.20	G	AO												
		01720	SD-11 Closeout Submittals															
			Progress Prints		G	AO												
			Final Requirements	1.6	G	AO												
			CADD Files		G	AO												
		02300	SD-06 Test Reports															
			Testing	3.13	G	AE												
			Earthwork		G	AE												
			SD-07 Certificates															
			Testing	3.13	G	AE												
		02316	SD-09 Manufacturer's Field															
			Reports															
			Field Density Tests															
			Testing of Backfill Materials															
			Dewatering Plan		G	AE												
			Shoring and Bracing Plans		G	AE												
			SD-06 Test Reports															

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		02316	Field Density Tests		G	AE												
			Testing of Backfill Materials		G	AE												
			SD-07 Certificates															
			Testing Lab		G	AE												
		02510A	SD-03 Product Data															
			Installation	3.1	G	AE												
			Satisfactory Installation		G	AE												
			SD-06 Test Reports															
			Bacteriological Disinfection															
			G..AE															
		02531	SD-03 Product Data															
			Pipeline materials	2.1														
			SD-07 Certificates															
			Joints															
		02532A	SD-06 Test Reports															
			Hydrostatic Tests	3.2	G	AE												
		02630	SD-03 Product Data															
			Placing Pipe	3.3														
		02722	SD-03 Product Data															
			Plant, Equipment, Machines, and	1.7														
			Tools															
			SD-04 Samples															
			Stabilization Geotextile		G	AE												
			SD-06 Test Reports															
			Initial Tests		G	AE												
			In-Place Tests		G	AE												

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		02722	Coarse Aggregate	2.1.1	G	AE												
			SD-07 Certificates															
			Stabilization Geotextile		G	AE												
			Testing Lab		G	AE												
		02935A	SD-03 Product Data															
			Chemical Treatment Material	1.3.3	G	AE												
			Work Plan and Schedule		G	AE												
			Delivery Schedule	1.3.1	G	AE												
			Maintenance Record	3.6.3														
			Application of Pesticide	3.5	G	AE												
			SD-06 Test Reports															
			Soil Tests	3.1	G	AE												
			Percolation Test		G	AE												
			SD-07 Certificates															
			pH Adjuster	2.1.1														
			Fertilizer	2.1.2														
			Mulch	2.2														
			Pesticide	2.4	G	AE												
		03150A	SD-03 Product Data															
			Preformed Expansion Joint Filler	2.2	G	AE												
			Sealant	2.3	G	AE												
			SD-04 Samples															
			Lubricant for Preformed	2.3.2	G	AE												
			Compression Seals															
			Field-Molded Type	2.3.3	G	AE												
		03200A	SD-02 Shop Drawings															

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		03200A	Reinforcement	3.1	G	AE												
			SD-03 Product Data															
			Welding	1.3														
			SD-07 Certificates															
			Reinforcing Steel	2.3														
		03300A	SD-03 Product Data															
			Mixture Proportions		G	AE												
			SD-04 Samples															
			Surface Retarder	2.3.5	G	G												
			SD-06 Test Reports															
			Testing and Inspection for	3.14	G	AE												
			Contractor Quality Control															
			SD-07 Certificates															
			Qualifications	1.3	G	AE												
		04200	SD-02 Shop Drawings															
			Structural Masonry	1.4	G	AE												
			SD-03 Product Data															
			Flashing	2.11	G	AE												
			Water-Repellant Admixture		G	AE												
			Cold Weather Installation	3.1.2	G	AE												
			SD-04 Samples															
			Concrete Masonry Units (CMU)	2.2	G	AE												
			Anchors, Ties, and Bar	2.6	G	AE												
			Positioners															
			Expansion-Joint Materials	2.10	G	AE												
			Joint Reinforcement	2.7	G	AE												

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		04200	SD-05 Design Data															
			Pre-mixed Mortar	2.4.4	G	AE												
			Unit Strength Method	1.4.1	G	AE												
			SD-07 Certificates															
			Concrete Masonry Units (CMU)	2.2														
			Control Joint Keys	2.9														
			Anchors, Ties, and Bar	2.6														
			Positioners															
			Expansion-Joint Materials	2.10														
			Joint Reinforcement	2.7														
			Reinforcing Steel Bars and Rods	2.8														
			Masonry Cement	2.4.3														
			Admixtures for Masonry Mortar	2.4.1														
			Admixtures for Grout	2.5.1														
		05090A	SD-03 Product Data															
			Welding Procedure Qualifications	1.5	G	AE												
			Welder, Welding Operator, and	1.6														
			Tacker Qualification															
			Inspector Qualification	1.7														
			Previous Qualifications	1.5.1														
			Prequalified Procedures	1.5.2														
			SD-06 Test Reports															
			Quality Control	3.2	G	AE												
		05210A	SD-02 Shop Drawings															
			Steel Joists	1.3	G	AE												
			SD-07 Certificates															

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		05210A	Steel Joists	1.3	G	AE												
		05310	SD-02 Shop Drawings															
			Fabrication Drawings	1.3.4	G	AE												
			SD-03 Product Data															
			Deck Units	2.3.1	G	AE												
			Sound Absorbing Material		G	AE												
			Accessories	2.2	G	AE												
			Mechanical Fasteners	2.2.11	G	AE												
			SD-05 Design Data															
			Deck Units	2.3.1	G	AE												
			SD-07 Certificates															
			Deck Units	2.3.1	G	AE												
			Accessories	2.2														
			Qualification of Welders	1.3.2														
			Fire Safety	1.3.3.1	G	AE												
			Wind Storm Resistance	1.3.3.2														
		05500A	SD-02 Shop Drawings															
			Miscellaneous Metal Items	1.6	G	AE												
		06410A	SD-02 Shop Drawings															
			Shop Drawings	1.7	G	AE												
			SD-03 Product Data															
			Wood Materials	2.1	G	.AE												
			Wood Finishes		G	AE												
			Finish Schedule	2.9.8.3	G	AE												
			SD-04 Samples															
			Plastic Laminates	2.3	G	AE												

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		07611N	SD-02 Shop Drawings															
			Roofing	1.2.5	G	AE												
			SD-03 Product Data															
			Roofing panels	2.1	G	AE												
			Attachment clips	2.3	G	AE												
			Closures	2.4.1	G	AE												
			Accessories	2.4	G	AE												
			Fasteners	2.4.2	G	AE												
			Sealants	2.4.3	G	AE												
			Insulation	2.5	G	AE												
			warranty	1.7	G	AO												
			SD-04 Samples															
			panel	2.1	G	AE												
			Accessories	2.4	G	AE												
			Sealants	2.4.3	G	AE												
		07840	SD-02 Shop Drawings															
			Firestopping Materials	2.1	G	AE												
			SD-07 Certificates															
			Firestopping Materials	2.1	G	AE												
			Inspection	3.3	G	AO												
		07920	SD-03 Product Data															
			Sealants	2.1	G	AE												
			Primers	2.2	G	AE												
			Bond breakers	2.3	G	AE												
			Backstops	2.4	G	AE												
			SD-07 Certificates															

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		07920	Sealant	3.3.6	G	AE												
		08110	SD-02 Shop Drawings															
			Doors	2.1	G	AE												
			Frames	2.5	G	AE												
			Accessories	2.3	G	AE												
			Schedule of doors		G	AE												
			Schedule of frames		G	AE												
			SD-03 Product Data															
			Doors	2.1	G	AE												
			Frames	2.5	G	AE												
			Accessories	2.3	G	AE												
		08330A	SD-02 Shop Drawings															
			Approved Detail Drawings	3.1	G	AE.												
			Installation	3.1	G	AE.												
			SD-03 Product Data															
			Overhead Rolling Doors	2.1	G	AE.												
			SD-06 Test Reports															
			Tests		G	AE.												
			SD-04 Samples															
			Overhead Rolling Doors	2.1	G	AE												
			SD-10 Operation and Maintenance															
			Data															
			Operation and Maintenance	1.6	G	PO	t											
			Manuals															
		08510	SD-02 Shop Drawings															
			Windows	2.2	G	AE												

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		08510	SD-03 Product Data															
			Hardware		G	AE												
			Fasteners		G	AE												
			Accessories	2.7	G	AE												
		08520A	SD-02 Shop Drawings															
			Aluminum Windows		G	AE												
			SD-03 Product Data															
			Aluminum Windows		G	AE												
			SD-04 Samples															
			Aluminum Windows		G	AE												
			SD-06 Test Reports															
			Aluminum Windows		G	AE												
			SD-07 Certificates															
			Aluminum Windows		G	AE												
		08710	SD-02 Shop Drawings															
			Hardware schedule	1.3	G	AE												
			Keying system	2.3.5	G	AO												
			SD-03 Product Data															
			Hardware items	2.3	G	AE												
			SD-08 Manufacturer’s Instructions															
			Installation	3.1														
			SD-10 Operation and Maintenance															
			Data															
			Hardware Schedule	1.3	G	AE												
			SD-11 Closeout Submittals															
			Key bitting	1.4	G	AO												

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		08800	SD-03 Product Data														
			Insulating Glass	1.6.1	G AE												
			Glazing Accessories	1.3	G AE												
			SD-04 Samples														
			Insulating Glass	1.6.1	G AE												
			Wire Glass		G AE												
			Sealant	2.3.3.1													
			SD-07 Certificates														
			Insulating Glass	1.6.1	G AE												
			Wire Glass		G G												
			SD-08 Manufacturer’s Instructions														
			Setting and sealing materials	2.3	G AE												
			Glass setting	3.2	G AE												
		09250	SD-03 Product Data														
			Regular Gypsum Board														
			SD-07 Certificates														
			Asbestos Free Materials	2.1	G AE												
		09310	SD-03 Product Data														
			Tile	2.1	G AE												
			Setting-Bed	2.2	G AE												
			Mortar, Grout, and Adhesive	2.4	G AE												
			SD-04 Samples														
			Tile	2.1	G AE												
		09510	SD-03 Product Data														
			Acoustical Ceiling Systems		G AE												
			SD-04 Samples														

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		09510	Acoustical Units	2.1	G AE													
			SD-07 Certificates															
			Acoustical Units	2.1														
		09650	SD-03 Product Data															
			Resilient Flooring and	2.7	G AE													
			Accessories															
			Adhesives	2.3	G AE													
			SD-04 Samples															
			Resilient Flooring and	2.7	G AE													
			Accessories															
			SD-06 Test Reports															
			Moisture, Alkalinity and Bond	3.3	G AE													
			Tests															
			SD-08 Manufacturer’s Instructions															
			Surface Preparation	3.2	G AE													
			Installation	3.1	G AE													
			SD-10 Operation and Maintenance															
			Data															
			Resilient Flooring and	2.7	G AO													
			Accessories															
		09900	SD-03 Product Data															
			Coating	2.1	G AE													
			Manufacturer's Technical Data	2.1	G AE													
			Sheets															
			Sealant		G AE													
			SD-04 Samples															

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		09900	Color	1.7	G	AE												
			Manufacturer's Material Safety	1.5.2	G	AE												
			Data Sheets															
			SD-10 Operation and Maintenance															
			Data															
			Coatings:	2.1	G	AE												
		09915	SD-04 Samples															
			Color Schedule	2.2	G	AE												
		10201N	SD-02 Shop Drawings															
			Wall louvers	2.2														
			SD-04 Samples															
			Wall louvers	2.2	G	AE												
		10800	SD-03 Product Data															
			Finishes	2.1.2	G	AE												
			Accessory Items	2.2	G	AE												
		13100A	SD-02 Shop Drawings															
			Drawings		G	AE												
			SD-07 Certificates															
			Materials	2.1	G	AE												
		13120	SD-02 Shop Drawings															
			Preengineered building		G	AE												
			anchor bolts	1.4.2.2	G	AE												
			SD-03 Product Data															
			materials	2.1	G	AE												
			Instruction Manuals		G	AE												
			Erection		G	AE												

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		13120	Qualifications		G	AE												
			SD-04 Samples															
			Factory color finish		G	AE												
			Accessories		G	AE												
			Roofing and Siding		G	AE												
			Fasteners		G	AE												
			Insulation		G	AE												
			Gaskets and Insulating		G	AE												
			Compounds															
			Sealant		G	AE												
			Wall Liners		G	AE												
			SD-05 Design Data															
			Building		G	AE												
			Foundation loads	1.2.1.4	G	AE												
			Anchor bolts	1.4.2.2	G	AE												
			Purlins and girts	2.1.1	G	AE												
			Bracing	2.1.1	G	AE												
			SD-06 Test Reports															
			Factory Color Finish		G	AE												
			Insulation		G	AE												
			SD-07 Certificates															
			materials	2.1	G	AE												
			SD-10 Operation and Maintenance															
			Data															
			Preengineered Building		G	AO												
		13202A	SD-02 Shop Drawings															

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		13202A	Fueling System	3.3.2.1	G	AE												
			Monitoring Systems		G	AE												
			SD-03 Product Data															
			Fueling System	3.3.2.1	G	AE												
			Permitting	1.5.1														
			Registration	1.5.2														
			FIO															
			Spare Parts Data		G	AO												
			Installation	3.1	G	AE												
			Framed Instructions	3.1.5	G	AO												
			Monitoring Systems		G	AO												
			Tests	3.2														
			Demonstrations	3.4														
			Experience	1.4.1														
			Welding	1.4.2														
			Verification of Dimensions	1.7.1														
			Fuel Supply	1.7.2														
			Coating for Belowground Steel		G	AE												
			Piping															
			SD-06 Test Reports															
			Tests	3.2	G	AE												
			SD-10 Operation and Maintenance															
			Data															
			Operation Manuals		G	AE												
			Maintenance Manuals	3.4	G	AE												
		13851A	SD-02 Shop Drawings															

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		13851A	Fire Alarm Reporting System	1.4.1	G	AE												
			SD-03 Product Data															
			Storage Batteries	2.2	G	AE												
			Voltage Drop		G	AE												
			Special Tools and Spare Parts	2.9	G	AO												
			Technical Data and Computer															
			Software															
			Training	3.5	G	AO												
			Testing	3.4	G	AE												
			SD-06 Test Reports															
			Testing	3.4	G	AE												
			SD-07 Certificates															
			Equipment		G	AE												
			Qualifications	1.3.7	G	AE												
			SD-10 Operation and Maintenance															
			Data															
			Technical Data	1.5	G	AO												
		13930A	SD-02 Shop Drawings															
			Shop Drawings	1.12	G	AE												
			As-Built Drawings	3.9	G	AE												
			SD-03 Product Data															
			Fire Protection Related Submittals	3.1	G	AE												
			Sway Bracing		G	AE												
			Materials and Equipment	2.3	G	AE												
			Hydraulic Calculations	1.7	G	AE												
			Spare Parts	1.11	G	AE												

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		13930A	Preliminary Tests	3.7	G	AE												
			Final Acceptance Test	3.9	G	AE												
			On-site Training	3.10	G	AO												
			Fire Protection Specialist	1.8	G	AE												
			Sprinkler System Installer	1.9	G	AE												
			SD-06 Test Reports															
			Preliminary Test Report	3.9	G	AE												
			Final Acceptance Test Report	3.9	G	AE												
			SD-07 Certificates															
			Inspection by Fire Protection	3.3	G	AE												
			Specialist															
			SD-10 Operation and Maintenance															
			Data															
			Operating and Maintenance	3.10	G	AO												
			Instructions															
		15080A	SD-02 Shop Drawings															
			Mica Plates	3.2.2.4	G	AE												
			SD-03 Product Data															
			General Materials	2.1	G	AE												
			SD-04 Samples															
			Thermal Insulation Materials		G	AE												
		15400A	SD-02 Shop Drawings															
			Plumbing System	3.7.1	G	AE												
			Electrical Work	1.4	G	AE												
			SD-03 Product Data															
			Welding	1.5.1														

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		15400A	Plumbing Fixture Schedule	3.8														
			Vibration-Absorbing Features		G	AE												
			Plumbing System	3.7.1	G	AO												
			SD-06 Test Reports															
			Tests, Flushing and Disinfection	3.7														
			Test of Backflow Prevention	3.7.1.1	G	AO												
			Assemblies															
			SD-07 Certificates															
			Materials and Equipment	1.3														
			Bolts	2.1.1														
			SD-10 Operation and Maintenance															
			Data															
			Plumbing System	3.7.1	G	AO												
		15556A	SD-02 Shop Drawings															
			Heating System	2.12	G	AE												
			SD-03 Product Data															
			Spare Parts															
			Welding	3.3														
			Framed Instructions	3.17														
			SD-06 Test Reports															
			Testing and Cleaning	3.14	G	AE												
			Water Treatment Testing	3.14.4	G	AE												
			SD-07 Certificates															
			Bolts	2.2.6.3														
			SD-10 Operation and Maintenance															
			Data															

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		15556A	Heating System	2.12	G	AE												
		15700A	SD-02 Shop Drawings															
			Drawings		G	AE												
			SD-03 Product Data															
			Unitary Equipment	2.4	G	AE												
			Spare Parts Data															
			G..AE															
			Posted Instructions	3.5	G	AO												
			Verification of Dimensions	1.5.1														
			System Performance Tests	3.4														
			Demonstrations	3.5														
			SD-06 Test Reports															
			Refrigerant Tests, Charging, and	3.3	G	AE												
			Start-Up															
			System Performance Tests	3.4	G	AE												
			SD-07 Certificates															
			Unitary Equipment	2.4	G	AE												
			Service Organization	2.1	G	AO												
			SD-10 Operation and Maintenance															
			Data															
			Operation Manuals		G	AO												
			Maintenance Manuals	3.5	G	AO												
		15895	SD-02 Shop Drawings															
			Drawings	3.1.8	G	AE												
			Installation	3.1	G	AE												
			SD-03 Product Data															

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		15895	Components and Equipment	2.1	G	AE												
			Test Procedures		G	AE												
			Welding Procedures	3.1.1.1														
			Diagrams	3.1														
			Manufacturer's Exerience															
			Welded Joints	3.1.1.1														
			Performance Tests	3.7														
			Field Training	3.9														
			SD-06 Test Reports															
			Performance Tests	3.7	G	AE												
			Testing, Adjusting, and Balancing	3.6	G	AE												
			SD-07 Certificates															
			Bolts															
			SD-10 Operation and Maintenance															
			Data															
			Operating and Maintenance	3.9	G	AE												
			Instructions															
		15950A	SD-02 Shop Drawings															
			Drawings	1.3.2	G	AE												
			SD-03 Product Data															
			HVAC Control System	1.5	G	AE												
			Service Organizations	2.1														
			Equipment Compliance Booklet	1.6														
			Commissioning Procedures	3.4														
			Performance Verification Test	1.6	G	AE												
			Procedures															

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		15950A	Training Course Requirements															
			SD-06 Test Reports															
			Commissioning Report	3.5.3														
			Performance Verification Test	3.5.3														
			SD-10 Operation and Maintenance															
			Data															
			Operation Manual	1.5	G	AE												
			Maintenance and Repair Manual	1.6	G	AE												
		15990A	SD-02 Shop Drawings															
			TAB Schematic Drawings and	3.3	G	AE												
			Report Forms															
			SD-03 Product Data															
			TAB Related HVAC Submittals	3.2	G	AE												
			TAB Procedures	3.4.1	G	AE												
			Calibration	1.4	G	AE												
			Systems Readiness Check	3.4.2	G	AE												
			TAB Execution	3.4.1	G	AE												
			TAB Verification	3.4.4	G	AE												
			SD-06 Test Reports															
			Design Review Report	3.1	G	AE												
			Systems Readiness Check	3.4.2	G	AE												
			TAB Report	3.4.3	G	AE												
			TAB Verification Report	3.4.4	G	AE												
			SD-07 Certificates															
			Ductwork Leak Testing															
			TAB Firm	1.5.1														

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		15990A	TAB Specialist	1.5.2													
		16370A	SD-02 Shop Drawings														
			Electrical Distribution System	3.7.3	G AE												
			As-Built Drawings		G AE												
			SD-03 Product Data														
			Nameplates	2.3	G AE												
			Material and Equipment	2.2	G AE												
			General Installation Requirements	3.1	G AE												
			SD-06 Test Reports														
			Field Testing	3.7	G AE												
			Operating Tests	3.7.5	G AE												
			SD-07 Certificates														
			Material and Equipment	2.2	G AE												
			SD-10 Operation and Maintenance														
			Data														
			Electrical Distribution System	3.7.3	G AE												
		16375A	SD-02 Shop Drawings														
			Electrical Distribution System	3.10.3	G AE												
			As-Built Drawings		G AE												
			SD-03 Product Data														
			Fault Current Analysis	2.16.4	G AE												
			Protective Device	2.16	G AE												
			Coordination Study	2.16.5	G AE												
			Nameplates	2.2	G AE												
			Material and Equipment	2.1	G AE												
			General Installation Requirements	3.1	G AE												

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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY				MAILED TO CONTR/ DATE RCD FRM APPR AUTH	REMARKS
					GOVT OR A/E REVWR	SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		16375A	SD-06 Test Reports														
			Factory Tests	2.15	G AE												
			Field Testing	3.10	G AE												
			Operating Tests	3.10.8	G AE												
			Cable Installation	3.2.1.4	G AE												
			SD-07 Certificates														
			Material and Equipment	2.1	G AE												
			Cable Joints	3.3	G AE												
			Cable Installer Qualifications		G AE												
			SD-10 Operation and Maintenance														
			Data														
			Electrical Distribution System	3.10.3	G AO												
		16415A	SD-02 Shop Drawings														
			Interior Electrical Equipment		G AE												
			SD-03 Product Data														
			Manufacturer's Catalog		G AE												
			Material, Equipment, and Fixture		G AE												
			Lists														
			Installation Procedures		G AE												
			As-Built Drawings	1.2.6	G AO												
			Onsite Tests	3.19.2	G AE												
			SD-07 Certificates														
			Materials and Equipment	1.4	G AE												
		16528A	SD-02 Shop Drawings														
			Lighting System	1.3.1	G AE												
			Detail Drawings		G AE												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
APG AMENDMENTS

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		16528A	SD-03 Product Data															
			Equipment and Materials		G	AE												
			Spare Parts		G	AO												
			SD-06 Test Reports															
			Operating Test	3.10.1	G	AE												
			Ground Resistance	3.10.2	G	AE												
			Measurements															
			SD-10 Operation and Maintenance															
			Data															
			Lighting System	1.3.1	G	AE												
		16710A	SD-02 Shop Drawings															
			Premises Distribution System	1.7	G	AE												
			Installation	3.1	G	AE												
			SD-03 Product Data															
			Record Keeping and	1.8	G	AE												
			Documentation															
			Spare Parts	3.1.8	G	AO												
			Manufacturer's Recommendations		G	AE												
			Test Plan	3.6	G	AE												
			Qualifications	1.5	G	AE												
			SD-06 Test Reports															
			Test Reports	3.6	G	AE												
			SD-07 Certificates															
			Premises Distribution System	1.7	G	AE												
			Materials and Equipment	2.1	G	AE												
			Installers	1.5.1	G	AE												

SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION
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ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAG # RAPH	CLASSIFICATION GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY						REMARKS
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		16711A	SD-02 Shop Drawings														
			Telephone System		G AE												
			Installation	3.1	G AE												
			Record Drawings		G AO												
			SD-03 Product Data														
			Spare Parts		G AO												
			Equipment	1.5.2	G AO												
			Installation	3.1	G AE												
			Acceptance Tests	3.5	G AE												
			Cutover and Records	3.4	G AO												
			SD-06 Test Reports														
			Acceptance Tests	3.5	G AE												
			SD-07 Certificates														
			Telephone System		G AE												
			Qualifications	1.4	G AE												

SECTION 10520

FIRE-PROTECTION SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Portable fire extinguishers.

1.3 SUBMITTALS

A. Product Data:

1. Fire Extinguishers: Include rating and classification; G AR.

1.4 QUALITY ASSURANCE

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Standard for Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide extinguishers listed and labeled by FM.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cold-Rolled Steel Sheet: Carbon steel, complying with ASTM A 366/A 366M, commercial quality, stretcher leveled, temper rolled.

B. Stainless-Steel Sheet: ASTM A 666/A 666M, Type 302 or Type 304 alloy.

2.2 PORTABLE FIRE EXTINGUISHERS

A. Multipurpose Dry-Chemical Type: UL-rated 4-A:60-B:C, 10-lb nominal capacity, in enameled-steel container.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged units.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing fire-protection specialties.

B. Install in locations and at heights as directed by Contracting Officer.

END OF SECTION 10520

SECTION 11320

GRINDER PUMP STATIONS

PART 1 GENERAL

1.1 SCOPE

Per APG request, the sanitary service for the proposed environmental testing mission building will connect to the existing force main on the west side of Surveillance Range Road. The existing 2” forcemain runs from APG Building 691 to APG Building 423. A new 2 inch line is proposed from the new pump station to the connection point in Surveillance Range Road. A control panel will be required inside the building as well as a Hyper Tac Remote Telemetry System. The Hyper Tac System requires a 20’ antenna for remote communications. Based on design computations, a F.E. Myers WGL20 duplex grinder pump package is proposed. The pump station and lines will be considered a public sewer system under the jurisdiction of the City of Aberdeen from the connection point to five feet outside the proposed building.

1.2 PRODUCTS

F.E. Myers model WGL20 duplex grinder pump station or approved equal based on a point-by-point comparison by a Maryland State approved Professional Engineer. Review of any proposed substitute product shall be the financial responsibility of the contractor.

1.3 WARRANTY

The pumps and controls shall be warranted for a period of (1) year from the date of start-up or (18) months from the date of shipment, whichever comes first.

1.4 QUALITY ASSURANCE

The submersible grinder pumps specified shall be the products of reputable manufacturers who have been regularly engaged in the design, manufacture, and furnishing of submersible waste water pump stations for at least 5 years. The motor, pump, wet-well and controls shall be manufactured by one company providing sole-source responsibility for the warranty of the unit.

PART 2 MATERIALS

2.1 PUMPS

The pump(s) shall be manufactured in the United States utilizing domestic parts and components in its construction. The volute, seal plate, cord cap, motor housing and impeller shall be constructed of high quality ASTM Class 30 minimum cast iron. The pump(s) shall be painted with air dry enamel. All exposed hardware shall be 300 series stainless steel. Discharge connection shall be a standard 1.25 inch NPT in the vertical position.

The pump impeller shall be of the recessed, vortex design. The impeller shall be of cast iron construction and machined for threading to the motor shaft. The impeller shall be capable of being trimmed to meet specific performance characteristics.

The pump shall have a two (2) bearing design consisting of an upper ball bearing for the purpose of carrying the thrust loads, and lower ball bearing to carry radial loads. Ball bearings shall be designed for 50,000 hours B-10 life.

The motor shaft shall be of 416 stainless steel.

2.2 GRINDER

The grinder mechanisms shall consist of radial cutter threaded and locked on the motor shaft by a screw, washer, and a shredding ring. Grinding shall be accomplished by a slicing action as opposed to a chopping action. Both the shredding ring and radial cutter shall be constructed of 440C stainless steel hardened to a minimum Rockwell C55 and shall be finish ground for a fine cutting edge. Two stage cutter mechanisms and/or those requiring adjustment for proper clearance shall not be acceptable.

The grinder shall be placed immediately below the pumping elements and shall be direct-driven by a single, one-piece, stainless steel motor shaft. The grinding assembly shall be balanced and operate without objectionable noise or vibration over the entire range of recommended pressures. The grinder shall be constructed so as to eliminate clogging and jamming under all normal operating conditions including starting.

The grinder shall be capable of reducing all components in normal domestic sewage, including a reasonable amount of “foreign objects”, such as paper, wood, plastic, glass, rubber and the like, to finely-divided particles which will pass freely through the passages of the pump and the 1-1/4” diameter discharge piping. The grinding mechanism must be capable of handling reasonable amounts of grit, often found in domestic sewage systems.

2.3 ELECTRIC MOTOR

The motor shall be squirrel-cage, induction type. Single phase motors shall be of the capacitor start, capacitor run design,____volt, single phase, 2 HP, 3450 RPM. Single phase motors shall be NEMA L Type. Three phase motors shall be NEMA B Type. The motor shall be constructed with open windings operating in a sealed housing which contains clean dielectric oil for heat dissipation from the windings and for lubrication of the bearings and seals. The stator windings shall be the open type with Class F insulation rated for 155 degrees C maximum operating temperature. Air-filled motors which do not have the superior heat dissipating capabilities of oil-filled motors shall not be considered equal.

Protection against excessive temperature for single phase motors shall be provided by a heat sensor thermostat attached to the stator windings and connected in series with the contactor coil in the control panel.

The heat sensor shall stop the motor if the motor winding temperature reaches 221 degrees F. The high temperature shutoff will cause the pump to cease operation, should a control failure cause the pump to run in a dry wet well. The thermostat shall reset automatically when the motor cools to a safe operating temperature.

Three phase motors shall have two heat sensor thermostats attached to top end of motor winding and connected in series with the magnetic contactor coil in control panel to stop motor if motor winding temperature reaches 221 degrees F. Thermostat shall reset automatically when pump cools.

2.4 MECHANICAL SEAL

Motors shall be equipped with double mechanical shaft seals to prevent leakage between the motor and pump. The seal assemblies shall consist of two Type 21 oil-lubricated rotary shaft seals in an oil-filled chamber. The materials of construction shall be carbon for the rotating faces and ceramic for the stationary faces, lapped and polished to a tolerance of one light band, with 300 stainless steel hardware, with all elastomer parts of Buna-N. Lower seal faces of tungsten carbide are optional.

The pump shall be equipped with a seal leak detection probe and warning system. This shall be designed to alert maintenance personnel of lower seal failure without having to take the unit out of service for inspection or requiring access for checking seal chamber oil level consistency.

There shall be an electric probe or seal failure sensor installed in the seal chamber between the two tandem mechanical seals. If the lower seal fails, contaminants which enter the seal chamber shall be detected by the sensor and send a signal to operate the specified warning device.

2.5 POWER CORD

Motor power cord shall be SOW/SOWA type 14 gauge, 5 conductor of a length of 15 feet. Cable shall be provided with a green ground wire to be accordance with local and national electric codes.

2.6 CABLE ENTRY SYSTEM

The cable entry system shall consist of the cable fastened by means of a cord grip in the top of the pump. The top of the pump shall contain a waterproof junction box which will provide space to connect the power cord to the motor leads. The motor leads shall seal between the motor housing and junction box by means of a rubber compression fitting around each wire.

PART 3 BASIN ASSEMBLY

3.0 BASIN

The basin shall be constructed of filament wound fiberglass/resin. Basin capacities, dimensions and minimum burial depth to insure pipe cover shall be as shown on plans. Basin shall be capable of

withstanding 150% of the anticipated maximum pressure exerted by saturated soil (120 lb/cf) at maximum bury depth. All station components shall function normally when exposed to these loadings.

The basins are filament wound and manufactured with premium E-type continuous glass fibers maintained in high constant tension during the manufacturing process. The tension fibers squeeze out excess resin producing superior strength basins with 65% glass content.

An anti-flotation collar extending a minimum 3″ beyond the O.D. of the basin wall shall be provided on all basins.

3.1 BASIN COVER

Steel basin covers shall be provided with each basin assembly. Each cover shall have a hinged access opening properly sized for installation and removal of the grinder pump and check valve assembly. The access opening shall have a minimum of two hinges and a lock hasp. Covers shall be constructed of non-skid, tread-plate steel with a minimum thickness of ¼″ and shall be coated with baked-on epoxy paint. The cover shall have a sleeve for mounting the control panel mounting stand and an elbow for junction box mounting and to run all wires from the junction box to the panel mounting stand. All covers shall be grass green in color. Covers shall be bolted to the basin with stainless steel cap screws. Zinc plated nuts shall be embedded in the upper flange of the fiberglass basin for corrosion resistance and to prevent turning.

3.2 RAIL ASSEMBLY

The lift-out rail system shall permit easy removal and installation of the pump and lower check valve without the necessity of personnel entering the wet-well. Structural guide brackets with guide yokes of sufficient bearing strength to prevent binding shall fasten to the pump. The yokes shall mate over guide rails of a minimum of 1 inch schedule 40 pipe running between an upper rail support and the discharge case. A lower discharge nozzle, downstream from the check valve, shall be guided into a chamfered cavity in the discharge case. A shoulder on the nozzle shall bottom on the discharge case to insure alignment for a leak-tight seal. Dual O-rings shall effect a hydraulic seal around the nozzle when it is in its operating position. A brace, easily removable from the top of the wet-well, shall be provided to lock the parts together and to prevent line surges from breaking the seal and allowing leakage. The discharge case shall have a discharge opening with piping to a discharge coupling through the basin wall.

3.3 CHECK VALVE

A heavy duty spring loaded, all rubber flapper type check valve with cast iron body shall
be an integral part of the discharge seal assembly and lift out with the pump assembly.
The valve design shall be such to allow for operation when negative heads, of up to 5 feet

are encountered. The valve shall be designed to operate at all pressures in the sewer
system created by the grinder pumps.

A flat set stainless steel spring, integrally molded into the Buna-N rubber flapper,
Shall be furnished in order to prevent collection of debris in the check valve.

3.4 LIFTOUT CHAIN

An adequate length of stainless steel lifting chain shall be supplied for removing the pump. The chain shall be of sufficient length and strength to effectively support the weight of the pump assembly during removal or installation.

3.5 DISCHARGE PIPE

Schedule 80 PVC discharge piping shall connect to the stationary discharge base lift assembly and terminate at a 1-1/4″ discharge flange mounted on the basin at the height shown in the plans. The discharge flange shall have a 1-1/2″ PVC solvent weld socket type hub for attaching external discharge piping.

3.6 SHUTOFF VALVE

A PVC true union ball type shut off valve with Teflon seats shall be furnished as an integral part of the internal pipe assembly. If the discharge depth is more than 2 feet from the surface an extension handle shall be supplied.

3.7 INLET FITTING

A one-piece inlet fitting for 4″ SCH 40 or SDR 35 plastic pipe shall be shipped loose for field installation as required by the installation.

3.8 JUNCTION BOX

The junction box shall be constructed of structural plastic for corrosion resistance and of adequate thickness to provide stability and mechanical strength. The junction box shall have a fully gasketed cover that is held in place by four (4) captive stainless steel screws with heads of adequate size so that they may easily be installed and removed without the use of special tools. The heads of the screws shall be totally encapsulated so that no metal parts are exposed. The cover shall be fastened to the main body of the junction box by means of a totally corrosion-resistant tether to prevent dropping the cover during service.

An adequate number of sealing-type cord grips shall be supplied for incoming pump and level control cords. The cord grips shall be made of non-corrosive material, such as PVC or nylon, and shall make an effective seal around the wire jacket. The cord grips shall seal to the junction box with an O-ring or gasket.

The junction box shall have a PVC solvent weld type conduit hub of adequate size to accommodate the number of wires required for pump and level control operation. The incoming wires shall be sealed by an external EY type seal-off (supplied by others) so that condensation from the conduit or groundwater will not enter the enclosure. The interior of the enclosure shall be of adequate size to accommodate the wires and connections for pump and level control operation.

The wires running between the control panel and the junction box shall be color-coded and fastened to the pump and level controls by means of adequately sized and insulated twist lock or crimp connectors.

The junction box shall be designed to NEMA 6 standards for occasional submergence.

3.9 LEVEL CONTROLS

Pump on, off and alarm levels shall be controlled by three (3) mercury tube float switches. Switches shall consist of a mercury tube switch sealed in a corrosion-resistant polypropylene housing with a minimum of 18 gauge, 2-wire, SJOW/A jacketed cable. The cable shall be of sufficient length to reach the junction box with no splices. The level controls shall be suspended from a stainless steel bracket so that adjustment or replacement may be done without the use of any tools. Level controls shall be UL/CSA listed.

PART 4 CONTROL PANEL

4.0 CONTROL PANEL

A NEMA 4X fiberglass control panel shall be furnished with each pumping unit to be installed, as shown on the plans.

The control panel enclosure shall be molded of glass reinforced polyester resins which are chemically resistant to corrosive atmospheres. The resin system shall be pigmented to impart a gray color to the enclosure and be resistant to ultraviolet light.

The resin system also shall include a flame retardant to obtain a flammability rating which meets U.L. 94V-O. Heat distortion temperature shall be 350 degrees Fahrenheit.

The enclosure shall be of one-piece, weatherproof construction with smooth, rounded corners and shall be constructed to have a smooth exterior and interior. The enclosure shall be fitted with a closed cell neoprene gasketed cover. The enclosure shall be provided with back panel mounting provisions.

The cover shall be hinged with a heavy duty corrosion resistant stainless steel piano hinge. The cover shall be lockable by means of two (2) high quality combination stainless steel latches and padlock hasps.

The enclosure shall be provided with external mounting feet on the top and bottom of the enclosure. These mounting feet shall be of fiberglass and molded as an integral part of the enclosure.

The back panel shall be a minimum of .080" aluminum and held in place by four (4) #10 screws, which will mate to the four (4) threaded standoffs, which are molded into the enclosure.

The panel shall include a double pole 20 amp main disconnect breaker, alarm circuit fuse, control circuit fuse, I.E.C. rated motor contactor, Klixon overload, pump hand-off-auto switch (momentary in the hand position), pump run light, seal leak light, start and run capacitors, start relay, terminal blocks, ground lug and all necessary wiring and brackets.

The control panel shall be fitted with a red lexan (polycarbonate) alarm light. The light shall be approximately 3" high by 3-1/2" diameter. The globe shall be mounted on top of the enclosure with a neoprene gasket. The lens cannot be removed from the exterior of the enclosure. The lens may be removed by entering the interior of the enclosure and removing four (4) #8 screws. The bulb shall be 40 watt minimum high intensity-medium base type. The bulb shall be easily replaced by removing a thumb screw from the support bracket on the interior of the panel.

The alarm shall have a bright glow and flash during high water conditions. The alarm light will go out when the water level drops.

All internal wiring shall be neat and color coded. Each wire shall be a different color or stripe (except for ground), and all incoming wires shall terminate into a box clamp type terminal block (except incoming power). All wires shall be 14GA. Type TEW rated for 105 degrees Celsius.

A schematic diagram (showing wire color) shall be permanently fastened to the inside of the enclosure. An installation and service manual shall also be included with each control panel.

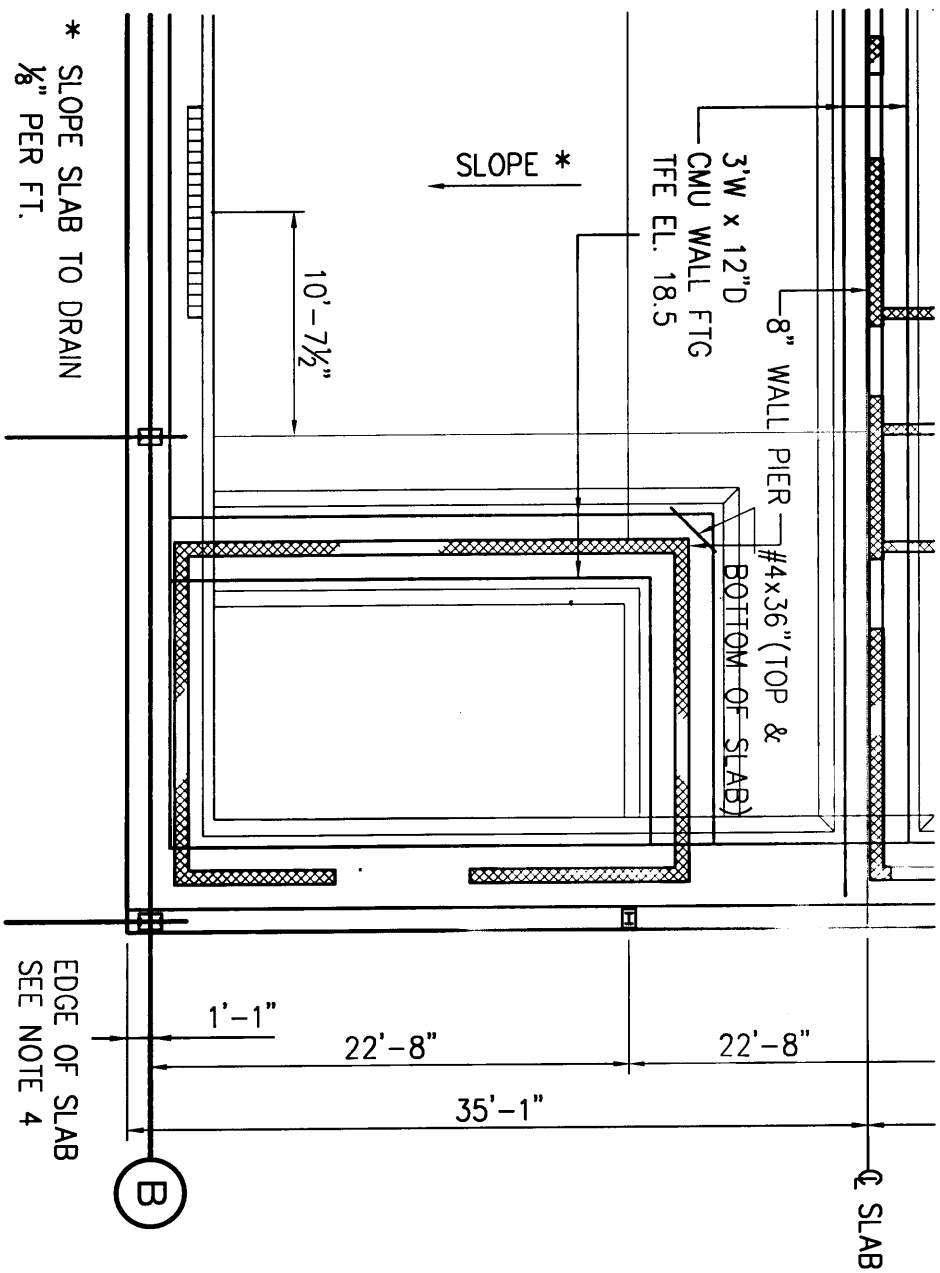
The control panel shall be U.L. listed as an assembly.

4.1 ACKNOWLEDGE ALARM CIRCUIT - BUZZER

An acknowledge alarm circuit (with buzzer) shall be provided to indicate an alarm condition. The buzzer shall be energized by either the alarm float switch or the alarm test switch and operate in conjunction with the alarm light. The buzzer shall be weatherproof and be rated for 85 DB at 10 feet. There shall be an exterior acknowledge switch that will silence the buzzer but allow the light to remain flashing during an alarm condition.

4.1 AUXILIARY CONTACT

A set of dry contacts shall be provided for the remote monitoring of high water alarm condition. The dry contacts shall close upon the detection of said condition. Contacts shall be rated for 3 amps.



Relocate Environmental Testing Mission ABERDEEN PROVING GROUND Aberdeen, Maryland 21005	DATE: July 07, 2004 DRAWING NUMBER: F-316-20-01 REFERENCE SHEET NO.: S-201 Plate: 28 OF 52	DRAWING # SK-S1